RECEIVED
CENTRAL FAX CENTER
NOV 0 6 2006

REMARKS

This is intended as a full and complete response to the Office Action dated August 4, 2006, having a shortened statutory period for response set to expire on November 4, 2006. Claims 1-14 have been examined. The Examiner rejected claims 9-12 under 35 U.S.C. § 112. The Examiner rejected claims 1-5 under 35 U.S.C. § 103(a) as being obvious over deWitte (U.S. 3,969,684) and Wikipedia laser articles. The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being obvious over deWitte, Wikipedia and Soldano. The Examiner rejected claims 7-14 under 35 U.S.C. § 103(a) as being obvious over deWitte, Wikipedia and Joannopoulos (U.S. 5,955,749).

Claim Rejections Under 35 U.S.C. § 112

The Examiner rejected claims 9-12 under 35 U.S.C. § 112. Applicants have cancelled claims 9-12, thereby obviating the rejection.

Claim Rejections Under 35 U.S.C. § 103(a)

The Examiner rejected claim 1 as being obvious over deWitte and Wikipedia laser articles. In response, Applicants have amended claim 1.

As amended, claim 1 includes the limitation of a stabilized gain semiconductor optical amplifier including an active waveguide comprising a laser oscillation structure having at least two resonant cavities, wherein the at least two resonant cavities are formed at least in a passive waveguide which is placed below the active waveguide on respective sides of the longitudinal sides of the active waveguide. deWitte does not disclose a stabilized gain semiconductor optical amplifier having an active waveguide that includes a laser oscillation structure with two resonant cavities that are formed in a passive waveguide which is placed below the active waveguide. Rather, deWitte merely discloses an amplifying medium placed within two resonators, wherein the first resonator includes mirrors M_1 and the second resonator includes mirrors M_2 (see deWitte, col. 4, lines 60-68). Moreover, there is no mention in deWitte of a stabilized gain semiconductor optical amplifier. Additionally, Wikipedia merely discloses general information about a Light Amplification by Stimulated Emission of Radiation (LASER) system and therefore fails to cure the deficiencies of deWitte.

As the foregoing illustrates, the combination of deWitte and Wikipedia fails to teach or suggest all the limitations of claim 1. Therefore, the combination of deWitte and Wikipedia fails to render claim 1 obvious. Applicants therefore submit that claim 1 is in condition for allowance and respectfully request withdrawal of the § 103(a) rejection. Additionally, since claims 2-4 depend from claim 1, these claims are allowable for at least the same reasons as claim 1.

The Examiner rejected claim 6 as being obvious over deWitte, Wikipedia and Soldano. Applicants respectfully traverse the rejection. Claim 6 depends from claim 1. As set forth above, the combination of deWitte and Wikipedia fails to teach or suggest all the limitations in claim 1. Further, Soldano fails to cure the deficiencies of the combination of deWitte and Wikipedia. This failure precludes the combination of deWitte, Wikipedia and Soldano from rendering claim 6 obvious. Applicants therefore submit that claim 6 is in condition for allowance and respectfully request withdrawal of the § 103(a) rejection.

The Examiner rejected claims 7-14 as being obvious over deWitte, Wikipedia and Joannopoulos. Applicants respectfully traverse the rejection of claim 7. Additionally, Applicants have cancelled claims 8-14. Claim 7 depends from claim 1. As set forth above, the combination of deWitte and Wikipedia fails to teach or suggest all the limitations in claim 1. Further, Joannopoulos merely discloses an integrated light emitting device that includes a substrate, an epilayer formed on a top surface of the substrate and a stratum formed on a top surface of the epilayer (see Joannopoulos, col. 7, lines 47-55). Therefore, Joannopoulos fails to cure the deficiencies of the combination of deWitte and Wikipedia in respect to claim 1. This failure precludes the combination of deWitte, Wikipedia and Joannopoulos from rendering claim 7 obvious. Applicants therefore submit that claim 7 is in condition for allowance and respectfully request withdrawal of the § 103(a) rejection.

New Claims

New claims 15-26 have been added to claim aspects of the present invention. Applicants submit that no new matter has been added. Further, Applicants believe that the references cited by the Examiner does not teach or suggest a stabilized gain semiconductor optical amplifier including an active waveguide comprising an amplification medium extending in a longitudinal, a lateral and a vertical direction and a laser oscillation structure coupled to the amplification medium, the laser oscillation structure comprising at least two resonant cavities extending in first

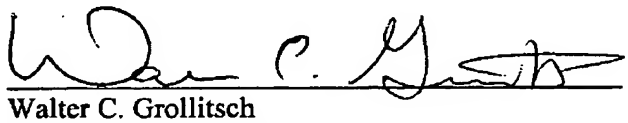
and second directions which are different from the longitudinal direction of the active waveguide and arranged in such a way as to permit the establishment of laser oscillations having at least two different relaxation oscillation frequencies, wherein the resonant cavities are defined by at least two structure members formed on respective sides of the longitudinal sides of the active waveguide, which are parallel to the longitudinal direction, and having at least one forbidden photonic band comprising at least two different reflection directions for a photon wavelength included in the amplification band of the active waveguide, as recited in new claims 15-21. Additionally, Applicants believe that the references cited by the Examiner does not teach or suggest a stabilized gain semiconductor optical amplifier including an active waveguide comprising an amplification medium extending in a longitudinal, a lateral and a vertical direction and a laser oscillation structure coupled to the amplification medium, the laser oscillation structure comprising at least two resonant cavities which are arranged in such a way as to permit the establishment of laser oscillations having at least two different relaxation oscillation frequencies, wherein the at least two resonant cavities are spaced apart from each other and have substantially identical directions, whereby the direction of each resonant cavity is substantially perpendicular to a longitudinal direction of the active waveguide, as recited in new claims 22-26. Therefore, Applicant believes that new claims 15-26 are in condition for allowance and respectfully requests the same.

RECEIVED
CENTRAL FAX CENTER
NOV 0 6 2006

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the case is in condition for allowance. If the Examiner has any questions, please contact the Applicants' undersigned representative at the number provided below.

Respectfully submitted,



Walter C. Grollitsch
Registration No. 48,678
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicants